

Patent Claims

(1) A method for controlling energy sources (21) or energy sinks (22) on an energy accumulator (1), in particular in a motor vehicle,

characterized

- in that at least one parameter which characterizes the state of charge of the energy accumulator (1) is measured,

- in that the parameter which characterizes the state of charge of the energy accumulator (1) is transmitted to a control unit (10),

- in that the control unit (10) generates at least one control signal as a function of the parameter which is characteristic of the state of charge of the energy accumulator (1), which control signal controls energy sinks (22) or energy sources (21) which are connected directly or indirectly to the energy accumulator (1), in terms of the power which they consume from the energy accumulator (1) or the power which they emit to the energy accumulator (1).

(2) The method as claimed in claim 1, characterized in that the control unit (10) generates the control signal in a manner to control the energy sources (21) or energy sinks (22), in that the energy accumulator (1) has a positive energy balance in a defined time unit, or a positive power balance.

(3) The method as claimed in at least one of the preceding claims, characterized in that the controller calls up measurements and/or characteristic variables of

- the electrical characteristics of the energy accumulator (1) and/or

- generator currents and/or

- acid levels of the energy accumulator and/or

- the engine rotation speed and/or
- the engine temperature and/or
- the energy accumulator temperature and/or
- the ambient temperature and/or
- 5 - the dynamic system characteristic, in particular of the energy accumulator, and/or
- ignition data for engine ignition and/or
- injection system data and/or
- data relating to the motronic system, and/or
- 10 - data from systems which are related to the motronic system, and/or
- engine operating data, and/or
- data relating to continuous loads and/or
- data from long-term loads, and/or
- 15 - data from short-term loads, and/or
- data from charging voltages and/or
- GPS data, and/or
- data from route planners, and/or
- data from wap-log systems, and/or
- 20 - data from systems which are related to wap-log systems, and generates the control signal completely or partially as a function of this data.

(4) The method as claimed in at least one of the preceding
25 claims, characterized in that a data mask carries out prioritization, filtering (9) and normalization of different data formats.

(5) The method as claimed in at least one of the preceding
30 claims, characterized in that the future time profile of the state of charge of the energy accumulator (1) is signaled to a user, in particular being indicated on a display or signaled acoustically.

(6) The method as claimed in at least one of the preceding claims, characterized in that the control unit (10) is connected to actuators by means of which engine parameters can be adapted.

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(7) The method as claimed in at least one of the preceding claims, characterized in that the control unit (1) is connected to actuators, by means of which the power consumption of infotainment elements or of internal or external vehicle illumination can be controlled.

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(8) The method as claimed in at least one of the preceding claims, characterized in that the control unit (1) calculates the energy consumption of energy sinks (1) on a planned route in advance.

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(9) An apparatus for controlling energy sources (21) and energy sinks (22), according to the method as claimed in at least one of the preceding claims, characterized in that the control unit (10) is a component of a combination instrument which also comprises the major part of the vehicle instrumentation.

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(10) The apparatus as claimed in claim 9, characterized in that the control unit (10) has a remote data transmission module.

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(11) The apparatus as claimed in at least one of the preceding claims 9, 10, characterized in that the control unit (10) has an engine management module.

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(12) The apparatus as claimed in at least one of the preceding claims 9 to 11, characterized in that the control unit (10) has a battery management module.

(13) The apparatus as claimed in at least one of the preceding claims 9 to 12, characterized in that the control unit (10) has a temperature module.

5 (14) The apparatus as claimed in at least one of the preceding claims 9 to 13, characterized in that the control unit (10) has a data input module.

10 (15) The apparatus as claimed in at least one of the preceding claims 9 to 14, characterized in that the control unit (10) has a filter (9).

15 (16) The apparatus as claimed in at least one of the preceding claims 9 to 15, characterized in that the control unit (10) has a memory (11).

(17) The apparatus as claimed in at least one of the preceding claims 9 to 16, characterized in that the control unit (10) has a logic module (12).

20 (18) The apparatus as claimed in at least one of the preceding claims 9 to 17, characterized in that the control unit (10) has a wire-free load controller (13).

25 (19) The apparatus as claimed in at least one of the preceding claims, characterized in that the control unit (10) has a wire-based load controller (14).